



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Mechanization in Land and Water Resources							
Course Code		BSM320		Couese Level		First Cycle (Bachelor's Degree)			
ECTS Credit	3	Workload	75 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of this course, learning the classification and theory of pumps, pumping plants and their characteristics, sprinkler and drip irrigation systems and parts, and selection of the appropriate pump for these irrigation systems.							
Course Content		Definition of irrigation machines; classification and applications of pumps, centrifugal, deep well and submersible pumps. Theory of pumps and pumping; pumping plants and characteristics. Moving irrigation machinery, sprinkler and drip irrigation systems and parts and design principles.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation)					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	70

Recommended or Required Reading

1	Uz,E., V.Demir.1995. Santrifüj Pompalar, Derin Kuyu Pompaları, Dalgıç Pompalar ve Pompa Denemeleri. E.Ü.Ziraat Fakültesi Yayınları,
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Week	Weekly Detailed Course Contents	
1	Theoretical	The importance of irrigation mechanization and overview of irrigation in Turkey and world. Definition of the irrigation mechanization
2	Theoretical	Classification and applications of pumps
3	Theoretical	Centrifugal, deep well and submersible pumps and applications.
4	Theoretical	Pumping plants and characteristics.
5	Theoretical	Different pumping plants and examination of the different pumping plant characteristics
6	Theoretical	Height of the pumping plants (input and output loads, NPSH etc.).
7	Intermediate Exam	midterm exam
8	Theoretical	Theory of pumps and pumping.
9	Theoretical	Pump performances and determination of the pump characteristics.
10	Theoretical	Explanation of the pump performance measurements (flow, pressure, power) with using technological equipment and software.
11	Theoretical	Experiments of the pump performance measurements (flow, pressure, power) in the pump testing laboratory.
12	Theoretical	Definition and parts of the moving irrigation machinery, sprinkler and drip irrigation systems.
13	Theoretical	Design principles of the moving irrigation machinery, sprinkler and drip irrigation systems.
14	Theoretical	final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	2	70
Midterm Examination	1	0	2	2
Final Examination	1	0	3	3
Total Workload (Hours)				75
[Total Workload (Hours) / 25*] = ECTS				3

*25 hour workload is accepted as 1 ECTS



Learning Outcomes

1	Classification of the agricultural machinery and irrigation pumps used in irrigation, and understanding of the structural properties.
2	Understanding of the characteristics of pumping plants and pumping facilities.
3	Understanding of the working and basic theoretical principles pumps.
4	Experiments of the pump performance measurements (flow, pressure, power) in the pump testing laboratory.
5	Definition and parts of the moving irrigation machinery, sprinkler and drip irrigation systems.

